



PLAN Series™

PLAN File Server for IBM PC DOS

Quick Reference Card

NESTAR

© 1981, 1982, 1983, 1984 Nestar Systems, Inc.
All Rights Reserved

Nestar Systems, Inc.
2585 East Bayshore Road
Palo Alto, CA 94303

■ GETTING STARTED

At boot time, the startup commands in your station's profile volume will be executed. Your profile's startup menu will be displayed, if present. The profile that will be used is:

1. //SYSTEM/PROFILE/\$nn (where \$nn is your station address in hexadecimal). If this isn't found, then:
2. //SYSTEM/PROFILE/MENU. If this isn't found, then:
3. You will be prompted for a profile pathname.

■ The Boot Menu

Once your profile has been found, any commands in its prolog will be executed, (that is, commands up to the word MENU). Note that a profile might contain only the prolog, always mounting and booting the same volumes. Next, any Menu header text will be displayed on your screen, and the Menu prompts from your profile will be displayed (optional).

■ Using the Menu

Select a menu item by pressing a function key. The commands in your profile associated with that item will be executed. If an error is returned by the File Server, you will be prompted:

Ignore? (Continue executing commands for the menu item)
Retry? (Retry the command that returned an error, after the condition causing the error has been fixed)
Abort? (Return to the menu display)

■ Leaving the Menu

Use a BOOT menu item to boot a volume.

Press <Esc> to execute the commands in the epilog of your current profile (the epilog follows the line ENDMENU).

■ Profile Commands

BOOT A: OR BOOT C:	MENU/ENDMENU
PROFILE [@\$nn] pathname	CLEAR
BASIC	NET
PAUSE text	<i>prompt text</i>
PRINT text	<Esc>bf (background, foreground)
NOCOLOR	MENU<Esc>Bbf (Border, background, foreground)
ECHO/NOECHO	

■ FILE SERVER COMMAND SYNTAX

1. File server commands must be typed on a single line:
(0-n blanks)command word(1-n blanks)
subcommand word(1-n blanks)pathname,other fields
2. A comma must separate the pathname from subsequent fields.
3. No blanks can be contained in:
 - a command word
 - a subcommand word
 - other fieldsThe pathname can contain blanks.
4. A field can have one of three forms:

keyword	(e.g., REPLACE or ALL)
keyword = value	(e.g., T = l)
letter:	(e.g., A:)
5. Throughout this reference card, keywords are indicated by capital letters; parameters are indicated by italics; optional parameters are indicated by square brackets, e.g., [usage]. The system assigns default values, where meaningful, when optional parameters are not specified.

■ FILE SERVER COMMANDS

Brief descriptions of file server commands appear on the following pages. For definitions of parameters (e.g., "pathname" and "number"), see the Parameters section.

To issue these commands, type N:NET *command* where N is the drive on which a volume containing the NET program is found, and "command" is the desired file server command; or, run the NET program (N:NET) and type in commands as needed; or, feed commands to NET using the DOS I/O redirection feature.

BLOAD pathname [,LOAD = address]

- loads binary virtual disk.
- loads at LOAD address in BLOAD, if present; if not, loads at LOAD address in corresponding BSAVE, if present; otherwise, loads at FROM address in BSAVE.
- LOAD = xxxx yyyy where xxxx = segment, yyyy = offset. For example, LOAD = \$10002345 would set the load address to 100:2345 or \$12345 absolute.

BRUN *pathname* [,LOAD = *address*]
[.,EXEC = *address*]

- BLOADS a binary virtual disk, then executes it starting at the EXEC = address, if present; otherwise at EXEC address specified on file creation; otherwise at first address loaded. See LOAD syntax in BLOAD ABOVE.

BSAVE *pathname*,FROM = *address*, size
[,LENGTH = *number*] [,LOAD = *address*]
[.,EXEC = *address*]

- (typed on one line) saves core image on disk, starting at FROM address, of SIZE or LENGTH (in bytes), for later loading (BLOAD) at LOAD and execution (BRUN) at EXEC. See LOAD syntax in BLOAD above.

CREATE *pathname*,*type*[size][,sectors][,protection]
[,drive][,usage][,LOAD = *number*]
[,LENGTH = *number*][,EXEC = *number*]

- (typed on one line) creates and optionally mounts a new virtual disk.
- Do not use CREATE in the IBM PC DOS environment. Use INIT command instead.
- LOAD, LENGTH, and EXEC parameters apply to binary volumes only.

DELETE *pathname*

- deletes a virtual disk from system.

HELP [*command name*]

or

? [*command name*]

- displays list of commands or syntax of specified command.

INIT *pathname*,*drive*[,size][,SYS]
[,ENTRIES = *entries*][,VOLNAME = *name*]
[,protection][,usage]

- (in one line) creates, mounts (for given usage, with given protection), and initializes a virtual disk of any size (certain environments only), with the specified number of entries in the root directory. VOLNAME is the DOS name to be assigned to the volume, if any. (This command, which applies to IBM PC DOS only, is a local command, not a file server command.)

LIST [*pathname*][,VERBOSE][,NESTED]

- lists entires in default or specified directory.
- VERBOSE gives size of each volume.
- NESTED lists entire hierarchy of directories. Sample command line: LIST /MAIN/USERS/JVW,VERBOSE,NESTED

LOCK *lockname*[:*password*][,usage]
[,USERS = *number*][,VAL = *number*]

- (in one line) locks "lockname" for exclusive (EXC) or shared (SHR) use, protected by the password if given. EXC is the default.
- defines maximum number of users by the USERS parameter. Default is no limit.
- assigns an integer lock value with VAL parameter. Default is 0.

LOCK + *lockname*

- increments lock value and returns old value.

LOCK - *lockname*

- decrements lock value and returns old value.

MOUNT *pathname*,*drive*[,usage]

- establishes a correspondence between a virtual disk and a drive.

MOVE *old pathname*, *new pathname*

- moves a volume or subtree (directory plus all its branches) from its current directory to a new directory.

OFF

- unmounts all volumes, unlocks all locks, and clears any passwords or DIRS set (at the file server receiving the command).

PROTECT [*pathname*][,protection]

- modifies passwords or access rights for a virtual disk or directory.

READLOCK *lockname*

- returns current lock value.

REMOUNT *drive* [usage]

or

REMOUNT ALL [,usage]

- changes the usage of mount on drive as specified. REMOUNT ALL remounts all drives on which there is currently a mount (at the file server receiving the command).

RENAME *old pathname*,*newname*

- renames specified file server volume or directory.

SET [GRPPW = *password*] [PRVPW = *password*]

- sets default group or private password.

SET DIR [*pathname*]

- if no pathname is given, clears default directory.

SHOW DATE

- displays dates as MM/DD/YY.

SHOW DIR

- displays name of current default directory.

SHOW ID

- displays file server ID number

SHOW INFO

- displays information on a virtual volume.

SHOW LOCK [*lockname*]

- lists all stations using specified lockname.

SHOW [ALL] LOCKS

— displays all locks set at own station or held in file server.

SHOW [ALL] MOUNTS [pathname]

— gives information on virtual disks mounted on the file server.

SHOW PROTECTION [pathname]

— displays group, private, and public access rights for pathname. If pathname not specified, uses default directory.

SHOW STATION

— displays own station number.

SHOW TIME

— returns current day of week, date and time.

SHOW TYPE drive

— displays type of virtual disk mounted on drive specified. For example, command line, "SHOW TYPE E:" would get the response 75,TYPE = IBM PC DOS for a DOS volume mounted on drive E.

SHOW TYPES

— displays types of virtual disks mounted on drives B: through O:.

SHOW VERSION

— returns current version number of the file server software.

SHOW VOLS

— displays names of disk units currently operating in the file server.

TIMESTAMP

— returns encoded form of current date and time:
yyymmddhhmmssd

UNLOCK lockname

or

UNLOCK ALL

— releases locked usage on a lockname or on all locknames currently held.

UMOUNT drive

or

UMOUNT ALL

— cancels previous mount(s).

WRITELOCK lockname,VAL = number

— sets current lock value.
— returns old lock value.

Command Parameters

access rights

R (read), W (write), E (erase), C (create), D (delete), and X (execute).

address

xxxx = segment, yyyy = offset.

For example, LOAD = \$10002345 would set the load address to 100:2345 or \$12345 absolute.

drive

a letter from A-Z followed by a colon

filepath

name[:password][/filepath]

lockname

(same restrictions as name)

name

name of disk unit, directory, or virtual volume: 1-15 characters; no commas, control characters, slashes, colons, returns or unprintable characters; imbedded blanks ok. Allowed characters: A-Z, 0-9, * ! " # \$ % & ' () = ? > < [] { } ^ @ _ .

number

if decimal, between -2^31 to 2^31-1 inclusive;
if hex, between \$0 and \$FFFFFF, inclusive.

password

a secret word used to gain access to protected volumes. Same restrictions as name, except control characters allowed.

pathname

unitname/filepath or filepath

(80 characters max.) An initial slash indicates first field is a unit name; no initial slash indicates current default directory is to be prefixed to pathname.

protection

PUBACC = access rights (Default: R)
GRPACC = access rights (Default: PUBACC)
PRVACC = access rights (Default: varies)
GRPPW = password, PRVPW = password

type

T = I (IBM PC DOS)	T = B (binary)
T = U (IBM PC p-System)	T = Z (system)
T = C (Apple // CP/M)	T = T (Text)
T = D (Apple // DOS)	T = Y (directory)
T = P (Apple // Pascal)	T = X (user defined)
T = 3 (Apple /// SOS)	T = R (request volume, used by servers)

unit

C: character (1 byte)
S: sector (256 bytes)
B: block (512 bytes)
K: (1024 bytes)
blank (default): block (512 bytes)

unitname

1, 2, 3 or 4[:password]; or name[:password]

usage

one of: EXC (exclusive), SHR (shared), or UPD (update)
one of: RO (Read/Only) or RW (Read/Write)
UPD allows one user RW access, others RO, SHR

volume size

SIZE = number[.unit]

■ Local Commands

<Alt> 999

User abort key

;anystring

ignored as a comment

PRINT anystring

displays "anystring" on the screen

command; command;...

Several file server commands can be entered on the same line if separated by semicolons.

%filename

causes commands to be read in from the DOS filename.

NOECHO

suppresses display of commands from a % file.

SET FS STN \$nn or @\$nn

sets the default file server station to \$nn. @\$nn command sends only one command to file server \$nn.

SHOW FS

displays file server to which commands are currently being sent.

?@

returns current default file server address

&\$nn

turns on the secondary file server.

SHOW DRIVES

displays available drives and whether real or virtual volumes are mounted on them. For virtual volumes, also displays size, type, usage, and Shadow file server usage.

?d

returns information about the specified drive "d" in the form

72,FS = \$nn,SFS = \$nn,T = x,usage,SIZE = nnnn.b
PS = xy,PE = nn,SS = xy,SE = nn

where

FS,SFS = \$nn	primary and secondary file server station addresses
T = x	volume type mounted (x = I,O,P,etc.)
usage	access to volume
SIZE	size of volume in blocks
PS,SS = xy	primary/secondary file server
PE,SE = nn	read/write stations (see !dxyxy command)
	primary/secondary file server error codes

!dxyxy

changes the status of drive d with respect to primary and secondary file servers as shown in the table.

xy	xy	Meaning
rw	-w	Read data from primary Write data to primary and secondary (default when using Shadow)
rw	--	Read data from primary Write data to primary (turn off secondary; default when not using Shadow)
r-	-w	Read data from primary Write data to secondary
-w	rw	Read data from secondary Write data to primary and secondary
--	rw	Read data from secondary Write data to secondary (turn off primary)

Error Codes (PE= or SE=)

nn	Message	Action
1	Volume not mounted	mount a volume and try again
2	Internal error	contact Nestar technical support
3	Internal error	" " " "
4	No read access	remount with read access
5	No write access	remount with write access
6	Read or write past end of volume	reprogram
7	Internal error	contact Nestar technical support
8	File server disk error	" " " "
9	Internal error	" " " "
10	Network timeout	retry the operation
11	Protocol error	contact Nestar technical support
12	User abort	self-explanatory

Configuring Driver

Use the NETCONFIG program to reconfigure network driver and change default settings for the following parameters:

Parameter	Default
file server station	\$FE
clicking on or off	ON
number of virtual disk drives	32
device name of virtual printer	LPT1
number of additional request blocks	4

FILE SERVER COMMANDS IN A PROGRAM

BASIC:

```
CALL FSCMD (cmd$)  
CALL FSRSP (rsp$, rlen%)  
rsp$ = LEFT$(rsp$,rlen%)
```

COBOL:

```
CALL "FSCMD" USING COMMAND.  
CALL "FSRSP" USING RESPONSE.
```

C:

```
int FSCMD (station, cmd, rsp, newcmd, done)  
char station, *cmd, *rsp;  
int newcmd, *done;
```

PASCAL:

```
A. CMDUNIT—file server commands and local commands  
PROCEDURE Cmd (Comm:CmdLongStr; Options:  
    INTEGER);  
PROCEDURE CmdLoop (Prompt:Ls80);  
PROCEDURE CmdExec (VAR fil:CmdFile);  
B. NETUNIT—file server commands  
FUNCTION FSCMD (Station:StationTyp; Cmd:NetLongStr;  
    VAR Rsp:NetStr80): INTEGER;  
FUNCTION FSCMD1 (Station:StationTyp; Cmd:NetLongStr;  
    VAR R sp:NetStr80; NewCmd:BOOLEAN; VAR Done:  
    BOOLEAN): INTEGER;  
FUNCTION DevSet (DeviceName:CHAR; Stn:StationTyp):  
    INTEGER;  
FUNCTION DevFree (DeviceName:CHAR): INTEGER;  
FUNCTION DevInfo (DeviceName:CHAR; VAR D:  
    DeviceDesc);
```

VIRTUAL PRINTERS

Virtual printers accept input text and write it to a file server volume, where it is queued to a print server.

Available Header Items

REQTYPE: <u>PRINT*</u>	TAG: <i>identifier</i>
ID: <i>name</i>	SERVER: { <i>name</i> ANY}
USER: <i>name</i>	PRINTER: <i>model</i>
NAME: <i>name</i>	SETUP: <i>forms</i>
STATION: <i>number</i>	COPIES: <i>n</i>
DATE: <i>timestamp</i>	EJECT: <i>n</i>
TITLE: <i>title</i>	TITLELINE: {YES NO}
SPOOLED: {YES NO TEXT DATA}	

* Required. All other items optional. Default values are underlined.

Escape Sequences

<ESC> V <i>text</i> <CR>	Add <i>text</i> followed by <CR> to the end of the header buffer as another header line.
<ESC> V .C [<CR>]	Close the virtual print file.
<ESC> V .Exx [<CR>]	Change the escape sequence to the two characters xx.
<ESC> V .N [<CR>]	Reset the header buffer to be null.
<ESC> V .P <i>text</i> <CR>	Change the prefix of the pathname to be used for the virtual print volume to <i>text</i> .
<ESC> V .R [<CR>]	Reset the header buffer to the default size.
<ESC> V .S [<CR>]	Set the default size of the header.

The virtual printer is called LPT1, PRN and LPT3. The NETCONFIG program can be used to change the name of the device to VPRN, VPRN2 and LPT3. LPT1 and PRN can then refer to local printers.

Note: <Shift><PrtSc> and <Ctrl><PrtSc> print on LPT1 whether local or virtual.

UTILITIES

STARTUP	executes a file of commands on the user's default volume at initialization time.
TCOPY	copies files from virtual volumes into Type = T Text volumes, and vice versa. TCOPY thus allows the movement of files between supported environments, through the use of Type = T Text files as intermediaries.
COUNT	analyzes network activity by counting packets sent by all stations on the network.
NEST	executes a file server command, and directs response code to the DOS condition ERRORLEVEL instead of to the workstation console screen.

ERROR AND INFORMATION MESSAGES

GENERAL SYNTAX (0-19)

- 0,OK
- 1,ILLEGAL COMMAND
- 2,NAME PARAMETER REQUIRED
- 3,UNRECOGNIZED PARAMETER
- 4,ILLEGAL DRIVE NUMBER
- 5,ILLEGAL STATION NUMBER
- 6,MISSING PROTECTION PARAMETER
- 7,PARAMETER APPEARS TWICE
- 8,ILLEGAL TYPE PARAMETER
- 9,COMMAND TOO LONG
- 10,PARAMETER TOO LONG
- 11,ILLEGAL PROTECTION PARAMETER
- 13,NUMBER OUT OF RANGE
- 19,HELP FILE NOT FOUND

CREATE (20-25)

- 20,TYPE PARAMETER REQUIRED (T =)
- 21,SIZE OUT OF RANGE
- 23,SIZE PARAMETER REQUIRED WITH T = B

DELETE (27-29)

- 29,CURRENTLY MOUNTED OR DEFAULT DIR

MOUNT (30-34)

- 30,DRIVE REQUIRED
- 31,IN USE
- 32,IN EXC USE
- 33,VOLUME NOT INITIALIZED
- 34,RW NOT ALLOWED ON DIRECTORIES

UNMOUNT (35–39)

35,DRIVE OR "ALL" REQUIRED
36,NOT CURRENTLY MOUNTED

LOCK/UNLOCK (40–49)

40,ILLEGAL LOCK NAME
41,IN USE
42,IN EXC USE
43,<lock value>
44,LOCK VALUE OUT OF RANGE
45,LOCK NOT HELD
46,LOCK HELD BY MAXIMUM USERS
47,LOCK/UNLOCK REQUIRES PASSWORD
48,MISSING VAL PARAMETER

BINARY COMMANDS (50–55)

50,BRUN ATTEMPT TO WRONG ENVIRONMENT
51,NOT BINARY
53,FROM PARAMETER REQUIRED
54,SIZE OR LENGTH PARAMETER REQUIRED
55,LENGTH/SIZE PARAMETER MISMATCH

SET/LIST (56–58)

57,FILE IS NOT A DIRECTORY
58,USE: SET TIME [YYMMDD] [,HH[MM]]

SHOW (59–80)

59,TYPE = SYSTEM
60,SHOW OPTION NOT RECOGNIZED
61,DRIVE REQUIRED
62,NOT CURRENTLY MOUNTED
63,TYPE = APPLE // CP/M
64,NO DEFAULT DIRECTORY SET
65,TYPE = APPLE // PASCAL
66,TYPE = APPLE // DOS
67,TYPE = BINARY
68,TYPE = DIRECTORY
69,UNKNOWN TYPE
70,yyymmddhhmmssw
71,--t--tt--t-t----
72,FS = \$nn,T = 1,access,usage,SIZE = nnnn.B
73,TYPE = TEXT
74,TYPE = APPLE /// SOS
75,TYPE = IBM PC DOS
76,TYPE = IBM PC P-SYSTEM PASCAL
77,TYPE = REQUEST
78,TYPE = USER DEFINED
79,FS CMD CHANNEL IS STN \$nn
80,DAY DD-MON-YYYY HH:MM:SS

LOCAL MESSAGES (89–93)

89,STATION NOT FOUND
90,DRIVE IDENTIFIER(S) REQUIRED
91,DRIVE NUMBER NOT ALLOWED
92,NO DRIVE INFORMATION
93,DRIVE NOT VIRTUAL

SYSTEM ERRORS (94–99)

94,FILE SERVER COMMAND NOT ISSUED
95,UNRECOGNIZABLE NETWORK RESPONSE
96,NO NETWORK CARD IN SLOT
97,FILE SERVER MEMORY FULL
98,NETWORK TIMEOUT
99,USER ABORT

FILE SYSTEM ERRORS (100–140)

101,END OF FILE OR RECORD OUT OF RANGE
102,FILE NOT FOUND
103,BAD DELIMITER IN PATHNAME
104,FILE NAME OR PASSWORD TOO BIG
105,NO ACCESS FOR READ TO DIRECTORY
106,NON DIRECTORY FOUND IN PATHNAME
107,END OF PATHNAME IS A DIRECTORY
108,CAN'T MOVE FROM ONE UNIT TO ANOTHER
109,ROOT DIR NOT SPECIFIED NO DEFAULT
110,NO ACCESS FOR READ
111,NO ACCESS FOR WRITE
113,NO ACCESS FOR ERASE
114,NO ACCESS FOR CREATE
115,NO ACCESS FOR DELETE
116,CAN'T DELETE NON-EMPTY DIRECTORY
117,FILE SERVER MEMORY FULL
118,DISK FULL
119,DIR OR VOL FULL—CAN'T BE EXTENDED
120,INTERNAL ERROR
121,UNINITIALIZED DISK
122,WRONG SOFTWARE VERSION
123,FILE ALREADY EXISTS
124,DISK I/O ERROR CODE X SUBCODE Y AT SECTOR Z
125,VERIFY FAILED (BAD MEMORY)
128,BAD UNIT NUMBER IN PATHNAME
129,DISKETTE WRITE PROTECTED
130,NEED PRIVATE PASSWORD FOR PROTECT
131,UNIT NAME NOT FOUND
132,CAN'T LINK TO DIRECTORY
133,DISK NOT READY
135,OUT OF FREESPACE DESCRIPTORS

LOCAL COMMANDS (200–250)

200,RESPONSES DIFFERENT
201,MISSING OR ILLEGAL READ/WRITE CODE
202,SFS = \$nn
203,PRIMARY FS CANNOT BE SAME AS SECONDARY FS
204,SECONDARY VOLUME IS NOT THE SAME AS PRIMARY
210,DOS I/O ERROR
211,ENTRIES INVALID WITH SYS OPTION